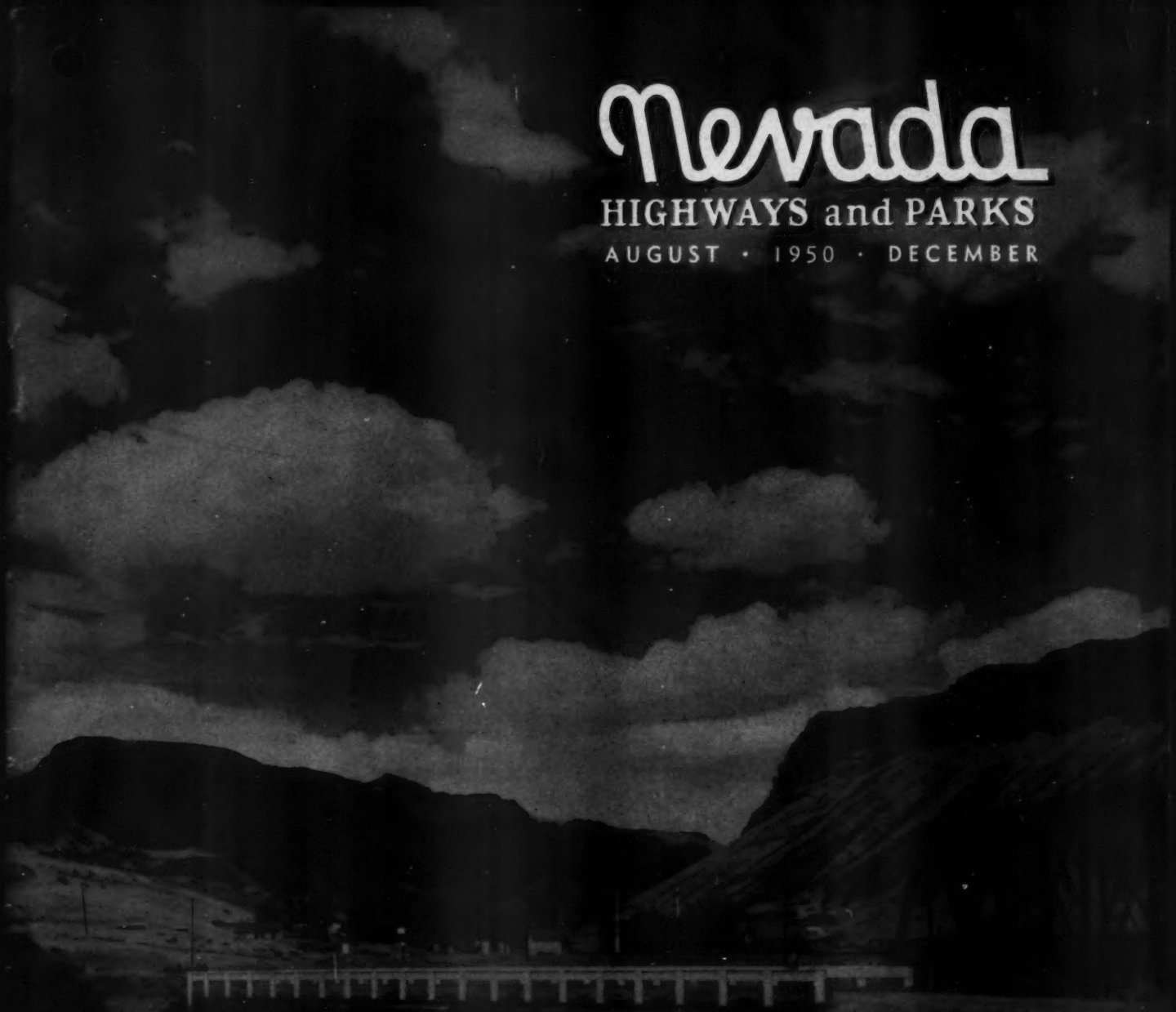
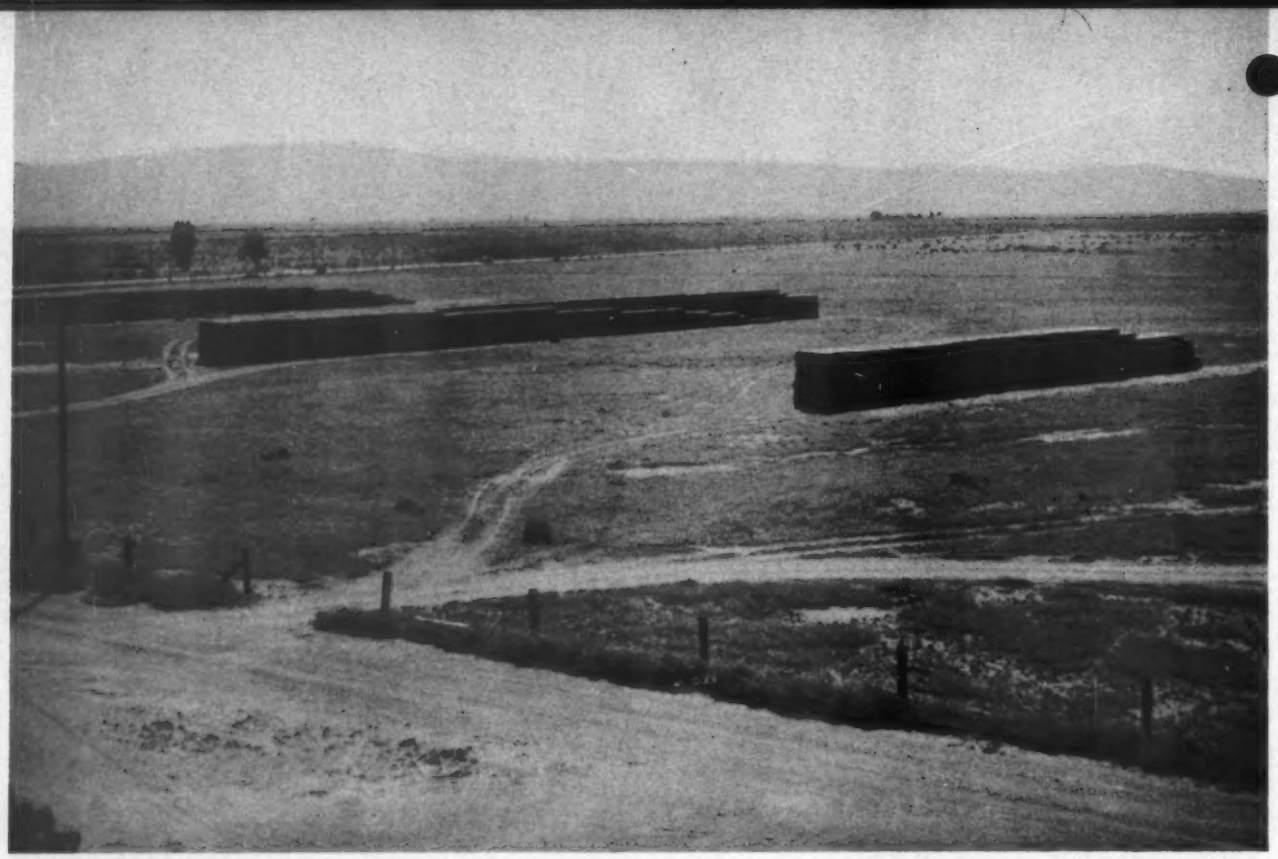


Nevada

HIGHWAYS and PARKS

AUGUST · 1950 · DECEMBER



Long piles of baled hay are seen on many of the ranches scattered all over the Big Meadows district, in Pershing County, Nevada.

Hay is one of the principal products of the Lovelock Valley. Soil is favorable for producing as many as five crops of alfalfa a season.

NEVADA
HIGHWAYS *and* PARKS

A Publication of the

Nevada Department of Highways

CARSON CITY, NEVADA

August 1950 December

Volume X Number 3

BOARD OF DIRECTORS—

GOVERNOR VAIL M. PITTMAN, CHAIRMAN
ALAN H. BIBLE, ATTORNEY GENERAL, MEMBER
JERRY DONOVAN, STATE CONTROLLER, MEMBER
WILLIAM T. HOLCOMB, STATE HIGHWAY ENGINEER
FRED G. GREULICH, EDITOR

THE FRONT COVER

High, brown volcanic rocks close in fast at Palisade Canyon, northern Eureka County, Nevada. Here the Humboldt River, on its westward course, has cut its pathway, through ages and ages, into the seemingly solid rocks. Palisade Canyon affords just enough room for the Humboldt River, the Western Pacific and the Southern Pacific main transcontinental lines across Nevada. The cliffs rise sheer for nearly 700 feet above the canyon floor.

NEVADA HIGHWAYS AND PARKS Magazine is published by the Department of Highways, in the State Printing Office at Carson City, and is issued for distribution, gratis, to persons interested in the present welfare and future development of Nevada. Nevada Department of Highways will be glad to mail a copy, or copies, upon request. NEVADA HIGHWAYS AND PARKS MAGAZINE IS NOT TO BE SOLD.

Rye Patch Assures Ample Water for Lovelock Valley

POUR HUMBOLDT River water over 40,000 acres of the Big Meadows in north central Nevada, use Lovelock as a modern trading post for a group of mines and ranches nearby, add to the picture many miles of hard-surfaced highways, a top transcontinental railroad, a good, serviceable airfield, and you have a patch of paradise in Pershing County that will stack up against anything this far-flung western country has to offer. With Rye Patch Dam thrown across the river, for water conservation, you begin to realize why there are so many mechanical farm implements in the fields. Add to this a genuine western hospitality, characteristic of the citizens, and you'll know what we mean when we say that Lovelock Valley is a place fit for a king. And that's the heart of Pershing County, Nevada.

Youngest in age, but not smallest in size, Pershing County, among other things, embraces the highly fertile Lovelock Valley, a veritable oasis in a semi-desert land, which is frequently referred to as "America's Valley of the Nile." In our State the analogy is made possible because of the American Humboldt River.

Our own Humboldt drains high mountains of a vast area in the northeastern section of Nevada, covering most of Elko and Humboldt Counties, and with its small tributaries the river meanders westward for several hundred miles before it crosses the Pershing County line. Then it courses across the county in a north-south direction until it reaches the Big Meadows, a part of Lovelock Valley. Some distance south of this place is the river's terminus—the Humboldt Sink.

Lovelock Valley land is fertile and stretches in a narrow band, several miles wide, on each side of the river. To give more specific dimensions the valley is measured as approximately 30 miles long and 12 miles wide. It is often likened to that of the Egyptian Nile valley because of its fertility. Humboldt River's final disposition, however, occurs under different conditions than that of the famous river of world history. While the Egyptian Nile has many mouths and forms a wide delta land, through which it pours its great volume into the Mediterranean, Nevada's more humble Humboldt flows sluggishly in one narrow stream bed towards a great, open, inland depression called the Humboldt Sink. There it vanished, or did until mankind aroused himself enough to do something about it. There the Humboldt waters were stilled, became stagnant, some evaporated and the rest eventually disappeared in pervious soils some distance south of the present small city of Lovelock. Marking the site of its demise is a vast stretch of flat, barren land, with big patches of salt-encrusted and mud-cracked soil here and there, small pools of briny water, an occasional bush of some hardy species, and a brown-ground landscape which extends over many thousands of acres. Another peculiarity about the Humboldt is the fact that it is an intra-State waterway because its entire watershed lies within the confines of the State of Nevada, and none of its waters ever reach the sea.

Similar potentialities of the two rivers and the fertility of its bordering land, gave some one in Nevada, several years ago, the idea that Lovelock Valley, along the lower reaches of the Humboldt, could be likened to the land of the Pharaohs of ancient times. This idea took root until the slogan has attained a certain degree of popular usage. At least the slogan sounds cosmopolitan, and that is something to be considered.

The Humboldt River's age, geologically speaking, might be in keeping with that of the Egyptian Nile, although our own river has been known by the white man for only a few years, comparatively speaking, while the Nile nurtured mankind during his first stages of recorded history. There are certain signs, or markings, along the river's course, high above the present stream bed which would indicate a ripe old age for the Humboldt. How long the Indians knew of its existence and mean-

Rye Patch Dam and the reservoir behind it, located 23 miles north of Lovelock. This reclamation unit stores enough water to serve approximately 40,000 acres of productive agricultural land in the lower Humboldt River Valley in Southeastern Pershing County, Nevada. This very important irrigation project was completed and started functioning in 1938.

Ranchers in the Lovelock farming community take pride in their homes. Most of them are unpretentious but modern and comfortable, which is conducive to a pleasant home life on the ranches.

derings is not a matter of recorded history, but, from relics and artifacts found in this general vicinity they, no doubt, were quite familiar with its wanderings for a long prehistoric period.

Whether an ancient civilization boasting of human engineers, or a thrifty Nature built the long earthen dyke across the lower end of the Humboldt River basin which forms the Lovelock Valley will perhaps never be known. But to the everlasting credit of either it was by this means that the Humboldt, before mankind ever knew it was there, carried muddy waters for hundreds of miles through a deviating channel to build up, season after season, the extremely fertile soil of the Big Meadows. This natural dyke, an engineering puzzle, stopped the current and made the waters quiet. Even today there remain liberal evidences of the lake created by the impounding of the waters behind the prehistoric dam. Much of this former stream obstruction can be plainly seen and the outline traced, about 25 miles west of Lovelock, adjacent to highway U S 40, by those who will closely observe.

There is also evidence that an ancient race of people throve on the abundance of fish, fowl and vegetation, thus resulting from the damming of the waters. Archaeologists have substantiated this theory through their uncovering, in the vicinity, of skeletons gigantic in stature, together with a large amount of collected material such as bone knives, spear and arrowheads, crude stone tools of an ancient age, woven mats and baskets from reeds, calendar stones, and various other interesting artifacts. Many of these discoveries have been preserved by individuals who live in Lovelock. Determination of the approximate age during which these prehistoric people lived is still a matter of deep, but inconclusive study.

With the natural evaporation of the water and the dropping of its muddy load, through centuries of normal and abnormal flows, the silt grew in depth, backed up and spread out over the lowlands. Eventually the soil absorbed plant life and became fertile with age. Thus was created a big, lush meadowland—a flat land covering more than 150 square miles of area in extent. From this development of prehistoric times our present generation of ranchers is reaping bounteous benefits.

Some of the earliest records of pioneer western exploration are contained in the notes of Kit Carson, famous Indian scout, wild game hunter, and tourist extraordinary of the western United States. He was one of the original cross-country travelers and the forerunner of millions who have followed his trail over splendid, paved highways in recent years. Kit Carson toured the Great American West on foot and horseback, the hard way, in lieu of a better method to journey, when that far-flung section of the nation was first open to travel. It wasn't a matter of a limited vacation trip with him. He wasn't especially interested in viewing the scenery, although it was there in all its pristine glory. Maybe he noticed it and maybe he didn't. At least he didn't make much mention of the scenery in his reports. But he did a lot of game hunting. He was more anxious to find a place where trapping would produce a valuable fur crop which he could sell at a profit in the St. Louis markets, where such commodities were in great demand at the time. In following the course of the Humboldt on one of his western treks, Kit Carson visited the Big Meadows. He thought it was a good place. He briefly mentions this site in his diary and noted that it was a place with good feed for plenty of stock and specifically referred to it as the Big Meadows. So the earliest settlers of the Lovelock Valley called it that—the Big Meadows.

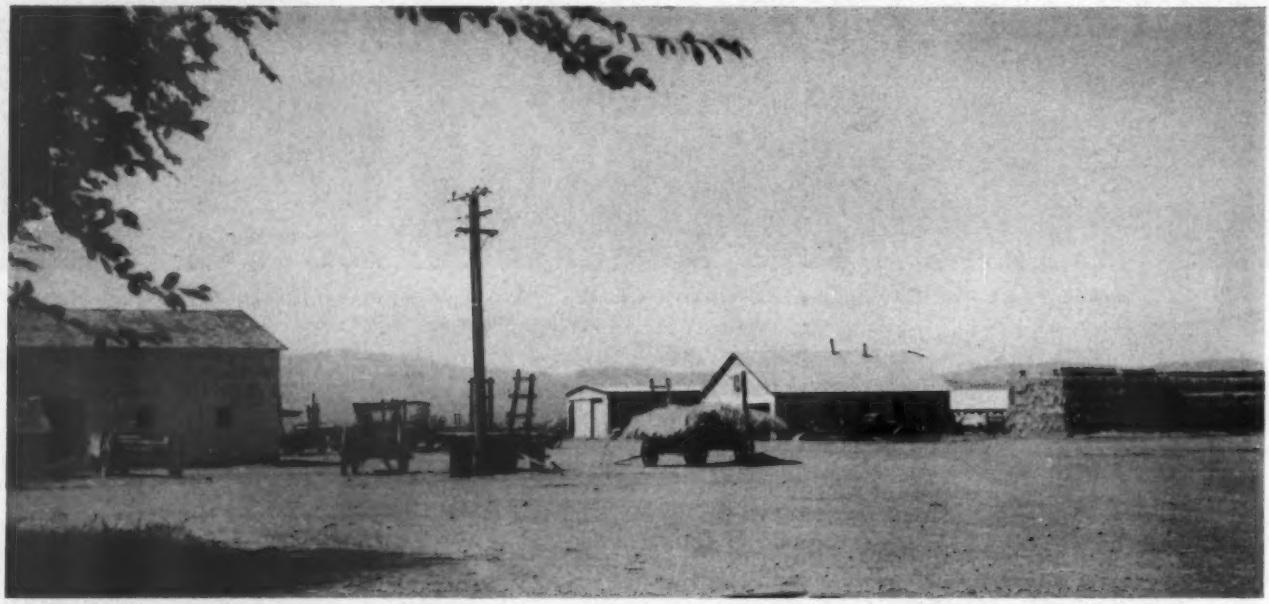
Not long after the establishment of a trading post on the present townsite came George Lovelock, an Englishman and

pioneer, who saw possibilities of agriculture in the meadows. Enterprising, and far-sighted, a rugged individual, he established his home there and engaged himself in the raising of cattle and winning of the land. Attracted by a bounteous soil, well watered, others came after him and as early as 1862 some of the rich acreage of the valley had been taken up for settlement. Those pioneers worked hard and long. As a result, prosperous years followed. Gradually, through force of habit the place, when it supported a good sized community, was always referred to as Lovelock's.

As the years rolled on and the Meadows became occupied and cultivated, other settlers joined these first-comers and took up land along the upper reaches of the Humboldt. Adjacent to the stream bed the soil was likewise suitable for cultivation of certain crops, and these settlers wrested the land from the grips of the river. They also put it to good use. As events transpired an over-generous appropriation of water from the people are not alone in this respect. In all of the Western States, water is a precious commodity and right of its possession and use very frequently brings conflicts. Court records of many Western States are clogged with many cases of long, bitter, water right fights. Some cases have been dragged through the courts for 20 years or more, and are still not adjudicated.

While serious conflicts arose along the Humboldt River course, the water situation around Lovelock eventually was fairly well settled in a more practical manner. As the water right situation dragged on, between lean years and costly suits, the ranchers of the Big Meadows district faced what seemed to be a hopeless job. Something had to be done about it, and quick, if they were to survive.

In 1933, with the nation deep in gloom on account of an economic depression, there remained but one course open to the settlers. The Federal government was lending money,



Part of the barnyard on the Bennett-Edwards spread, south of Lovelock, one of the largest ranches operating in the district.

fickle river, through acquired water rights by upstream users, eventually ensued. This, in a large measure, reacted adversely to the settlers farther down in the Big Meadows. With each passing year, and as each additional rancher upstream acquired land with water rights, the situation became more serious. Eventually the ranchers of Lovelock Valley were faced with a shortage of water with which to cultivate their crops. In seasons when the snowfall in the distant mountain ranges was meager during the winter, and resulted in early spring run-off which was sub-normal, the water problem to the Big Meadows people became acute. During the more abundant snow supplies the situation temporarily rectified itself. But it wasn't a permanent or satisfactory solution because of the element of uncertainty which was always plaguing the ranchers about their prospective crops. The situation eventually resulted in litigation—the old, old story of the fight for water. Upstreamers and downstreamers pitched into their legal battles and, besides many cracked heads and loss of livestock to boot, court fights were costly. There didn't seem to be any other method of solution, at the time. But the Lovelock Valley, Nevada, under favorable interest provisions, through the National Industry Act. Ranchers in the Meadows united themselves and decided upon a course of action. Borrow money from the national treasury, buy upstream water rights and transfer the water to the Lovelock Valley, where it is badly needed—there lay an out and a last hope. The idea was fostered and the Pershing County Water Conservation District was organized and bonded. There followed the expenditure of over $1,000,000—a pretty large sum in those hectic days—in the proposed Rye Patch Dam project. This consisted of the Rye Patch Dam unit which would back up the waters of the Humboldt and store 180,000 acre-feet of water and, also, the acquisition by the Big Meadows people of approximately 50,000 acre-feet of water through purchase of upstream water rights. That, briefly, was the general plan and it was carried out to the conclusion without any serious hitch. After the dam began functioning, delivery of the purchased water started in the spring of 1937.

The cultivated area of Pershing County, while large, is only a small part of the total area covered by this newest political subdivision of Nevada which came into being in 1919, con-

Big ranch pattern in the Lovelock Valley as it appears from the air. With a dependable water supply a variety of abundant crops is assured. This spread lies adjacent to the Victory Highway.

Pershing County Courthouse occupies a pleasing site in Lovelock. The County was organized as a Nevada political unit in 1919.

Railroad Street, Lovelock, looking towards the Southern Pacific Railroad passenger depot.

The Federal post office in Lovelock serves hundreds of ranchers. Not a large structure, but adequate for Lovelock's needs, it is indeed an asset to the community.

Main street intersection of Lovelock. Thousands of tourists make this pleasing western community their night driving objective during the heavy summer travel season.

Big Meadows soil is fertile and ranchers successfully cultivate a variety of crops. Corn does well here too, as the photo indicates.

temporary with the events at the close of the first World War. Forty thousand acres of land doesn't look very big when stacked up against a total of 3,937,920 acres in the entire county. Yet this "patch of paradise," nourished by the Humboldt, assumes extraordinary proportions because it affords livelihood and prosperity from agriculture, to the greater number of the folks who make Pershing County their domicile.

Other sections of this vast spread of land produce vital raw materials other than agricultural products which eventually, in one form or another, find their way into the industrial world. Minerals and metals abound in the several mineralized mountain ranges which sprawl all over Pershing County's terrain. From the mines comes a variety of products which go to make paints, steel plate, copper wire, lead pipe, plaster board, tooth paste, silverware, and many others too numerous to list. This is all very important in the economy of Pershing County as well as to the State and even to the nation. Pershing County, albeit, is better known for its agricultural pursuits from the large irrigated sections adjacent to the Humboldt than it is for its very large mineral production.

Ranch lands in the area have been cultivated since 1860, but the annual yield of harvests was always subject to the whims of the river. This Nevada stream was either a docile servant, generous to a fault, or an untamed monster, miserly in its benefactions, depending on how much snow water rolled down its stream bed in the spring and early summer months. The winter snowfall over its entire watershed of wide ramifications was a controlling factor. Old Man River just kept rolling along, out of control, until he rolled himself right into the Humboldt Sink.

Those ranches upstream, which had prior right, got their water first and what was left went to the Lovelock Valley ranchers. If the river was flowing full at a time when the water could not be used in the Valley, it wasted into the Sink.

Over the years, from the time of discovery of the Big Meadows down to the present day, holdings of a varied size were accumulated, then developed, by individual groups or companies. Some of the ranches became veritable empires while others remained reasonably small in size. Many of those who owned land upstream built small retention basins of their own to conserve water for their ranch use. Farming of a general nature, and cattle raising, were the specialties. Sometimes the herds counted thousands of head. The larger herds were found, more particularly, in the upstream sections.

The great impetus to the development of the Big Meadows area, of which Lovelock is the trading center, came about 1937 when the Rye Patch Dam was completed across the lower end of the Humboldt, not far from where the waters entered the big sink. This Rye Patch Dam now backs up the river for more than 20 miles, with the head of the artificial lake near Imlay, a small railroad division point on the Southern Pacific Railroad. Construction of the dam started in 1935 and was finished in early 1937. It was supervised by the Bureau of Reclamation but actual construction work was done by private contract. Rye Patch, 23 miles north of Lovelock, is located where the Humboldt has a deep channel through an ancient lake bed, and although the dam is within a mile of the Victory Highway it cannot be seen from that heavily traveled thoroughfare, as the river is considerably below the level of the surrounding country. A good, hard-surfaced road leads

over from highway U S 40 (The Victory), however, and goes right to the top of the structure.

The dam is 800 feet long, and rises 72 feet above the river bed. At the east end is a concrete spillway, 110 feet wide, and the remainder of the dam is an earthen fill. The dam, 500 feet thick at the bottom, is wide enough on top to accommodate a 25-foot roadway.

Flow of the river is controlled at the spillway. Outlets, through which the irrigation waters flow, are two 4-foot steel pipes, each controlled by a set of two gates. In the event one set of gates get out of control the second set, automatically operated, can be dropped into place.

The dam itself cost approximately $400,000 which will be paid off by the Lovelock Irrigation District to the Reclamation Service over a period of 40 years. The project eventually will be self-liquidating and reflects no outlay cost to the Federal government.

Added costs for securing upstream water rights and also purchase of land for the reservoir, which are a part of the overall project, make the total cost approximate $1,000,000. The dam guarantees, as near as is humanly possible, an adequate water supply for the fertile valley and the landowners of the district have never had a shortage of water since the dam and the reservoir began functioning 14 years ago.

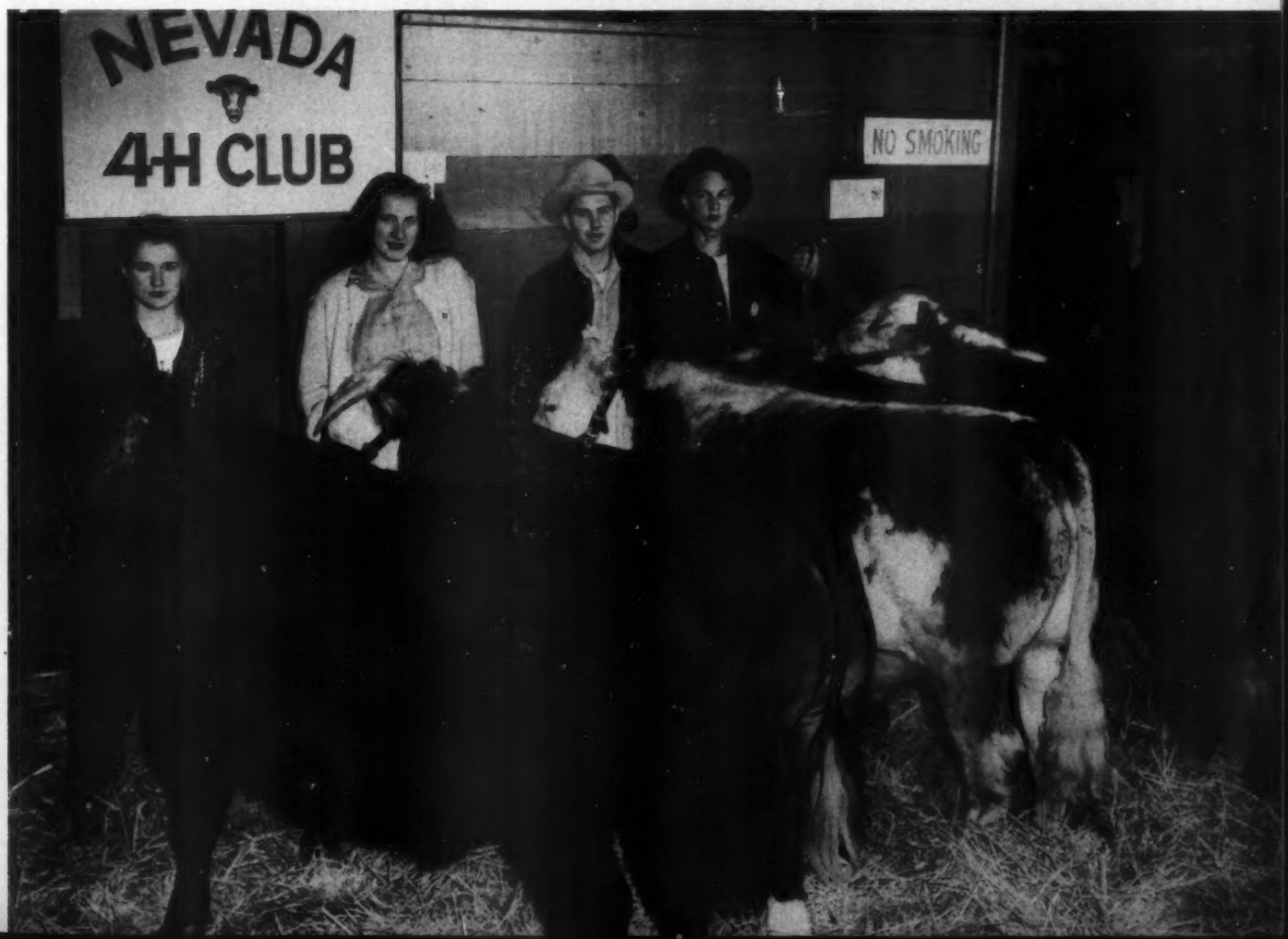
Besides its primary function of providing ample water for irrigation in the Lovelock Valley, the resulting reservoir upstream has added recreational facilities for folks living in the general vicinity. The reservoir is good fishing ground, and its waters also harbor thousands of wild fowl in season, and all of these factors have brought added assets in the way of better living to the Pershing County people.

Rye Patch Dam brought into productiveness many acres of additional valley land with an assured water supply for the maturing of crops of a varied nature. Through the benefits of the project, large volumes of the former wasting waters of the Humboldt are sent to all parts of the Meadows by canals and laterals. On the ranches these waters give an assurance of high-quality alfalfa hay, sugar beets, wheat, corn, vegetables of all kinds, and fruit.

To add further conveniences to the project ranchers, good, hard-surfaced highways reach out to all parts of the Big Meadows. This same general area is served by a transcontinental railway line, the Southern Pacific, plus many bus and truck lines. With such excellent transport facilities, products from the ranches can be sent to all parts of the country where markets have been developed. Adequate airfield facilities have likewise been developed to accommodate planes, particularly of the small and medium type.

With such convenient transport factors available one can readily understand why this section of Nevada has achieved great progress in recent years, and attained a high position both as an agricultural community and also as a residential

This kind of stock helps keep the young folks "down on the farm." Pershing County 4-H'ers nearly always cop a prize at the State meet.



All types of mechanical farm equipment can be seen on the ranches. Many such loads of alfalfa go to the Lovelock mill where it is processed and shipped to outside markets.

Big fields require machinery for successful operation. This hay baler has been used on one of the five crops of alfalfa raised on the productive soil.

locale. The catchy, but perhaps slightly over exaggerated slogan of "America's Valley of the Nile" does not seem to have been seriously misapplied at all.

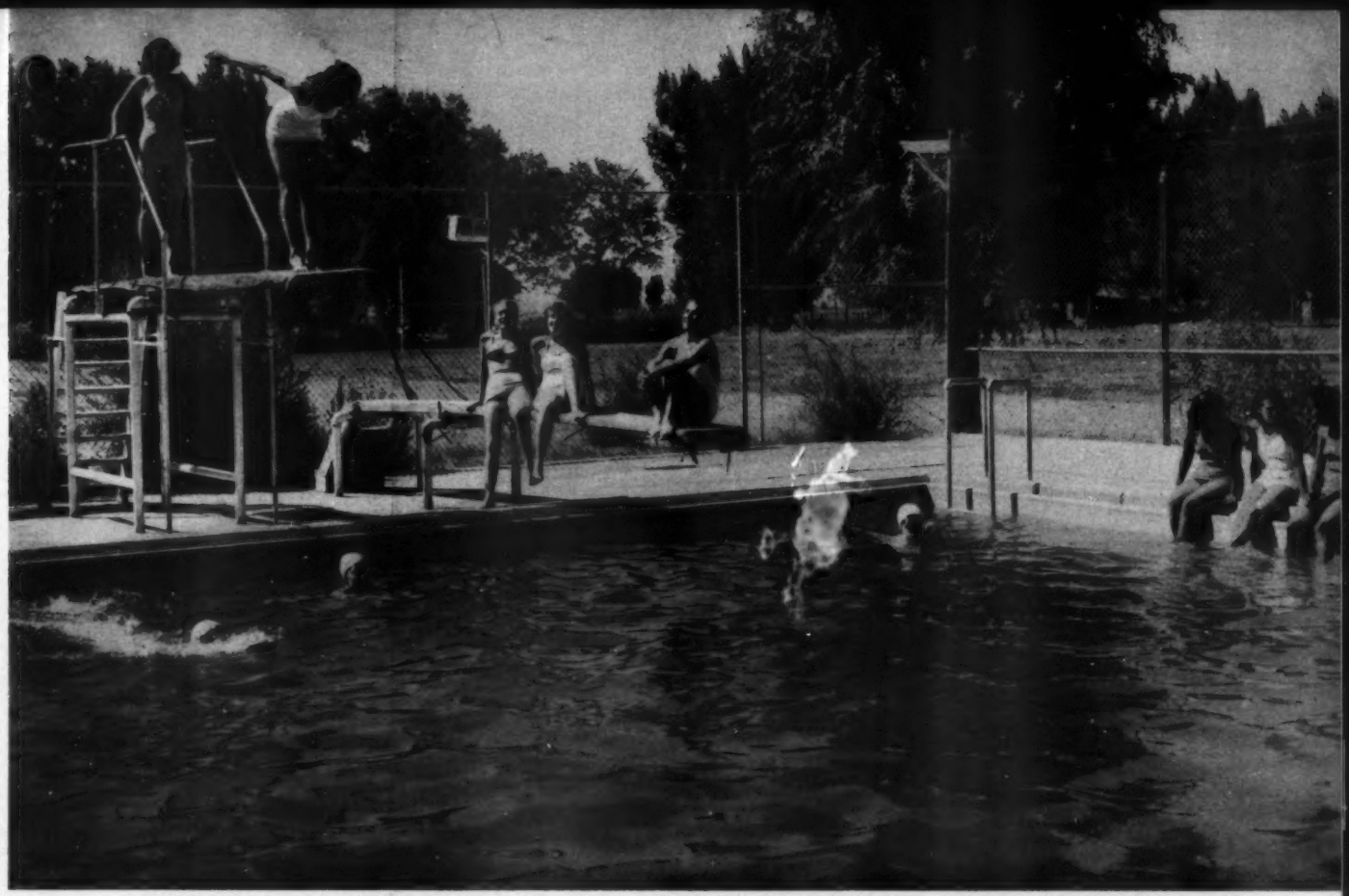
To give added measure to these advantages is the fact that Pershing County winters are generally mild with normally light snowfall in the lowlands, but greater depths in the high places. Summers are reasonably hot during the daylight hours, but cool at night. Winter temperatures seldom go below zero, in their extreme, while summer readings on the thermometer range in the 70's, infrequently crawling up into the 90's, but rarely does the mercury show a reading above the century mark. Even so the dryness of the atmosphere and quick evaporation propensities make the summer heat bearable, and by nightfall temperatures drop to comfort and coolness. In fact the temperature range, in the Lovelock area, often exceeds 40 degrees in a 24-hour period.

If the Lovelock Valley had to depend upon natural rainfall for its moisture there would be difficult problems to solve before farm crops could be produced, because the annual rainfall rarely exceeds 4.75 inches. It is primarily due to the fact that the Humboldt watershed winter snows pile up deep in the mountains and then when the spring sun brings on a melt, these waters are captured behind the Rye Patch Dam.

When the great migration of Americans took place in the middle years of the Nineteenth Century the Big Meadows was a strategic stopping place along the beaten trail. As the ox drawn covered wagons crawled across the prairies, and later the hot desert country of western Utah and eastern Nevada, the main objective of the trainmasters was to reach the Great Meadows as quickly as possible. There they would find forage for their oxen and horses, recuperation for the personnel, and good water for all concerned. It also bore a different reputation. Those who crossed the plains in an early day would remember this as the place where hundreds of emigrants were compelled to leave their worn-out teams, wagons, and the remains of their outfit, to be appropriated by any who liked and to make the balance of their way on foot to California. Guns, pistols, clothing, carpenter tools and every conceivable thing which they had loaded their wagons with, in Missouri, were culled over and discarded to put themselves in light marching order for the balance of the trip. They still had forty miles of treacherous desert to cross before they reached the comforting location of either the Carson or the Truckee Rivers.

White men knew the Humboldt as early as 1828 when Peter Skeene Ogden, another of those early day tourists extraordinary, with a party of Hudson Bay Company trappers caught fur-bearing animals on the Mary River. There was a certain element of mystery in the minds of many, at the time, concerning the Mary River. Eventual discoveries and explorations proved it to be far different than originally visualized. Later this stream was called the Ogden River and still later it became the Humboldt, the name which has prevailed. In 1841 the Bartleson-Bidwell party, including probably the first white woman to set foot in this area, crossed Nevada land by way of the Humboldt River and Carson Sink, probably touching the very soil on which now stands the city of Lovelock, the county seat.

General view, from aloft, of the modern little city of Lovelock in a patch of paradise in the Humboldt River Valley. A busy trading center for hundreds of ranchers in the surrounding country.



Lovelock youngsters certainly get a lot of healthy fun out of this swimming pool in hot summer months. It's a favorite spot for home-towners.

The first permanent settlers were induced to come here in consequence of the location of a station for the overland stage at this point. James Blake located in April 1861, being joined by George Lovelock and others the following year. In 1866 the Central Pacific Railroad Company established a station here for the convenience of the people doing business in the Trinity Mining District and a small town, numbering 60 inhabitants, was the result.

It was George Lovelock, the leader of the community at the time, who claimed the right of way with which he influenced the Central Pacific to build its station. The Big Meadows was the center of several small ranches and looked promising to the railroad company officials, so Lovelock was selected. It was first decided to build the station at Oreana, 14 miles north, where there was a good, fresh-water spring. Lovelock folks, seeing their opportunity, offered the right of way concessions to the company and this changed the plan.

Lovelock, center of trade for the area as well as a far-reaching outlying district, is a modern city of about 3,000 population, enjoys fine transportation facilities on both highway and railway, and is a favorite spot for tourists making overnight stops. The community boasts of a modern high school and an elementary school which would do justice to cities of much larger size. This Pershing County seat is the home of several very acceptable hotels and tourists courts. For its recreational outdoor facilities it supports a fine tennis court, swimming pool, amateur ball field, and fields for other outdoor sports, which is a far-reaching development from that day in 1860 when George Lovelock thought he saw possibilities in the area.

Annual income from the farm products of Pershing County, mainly in the Lovelock Valley, exceeds $2,000,000. The crops consist of alfalfa, wheat, barley, potatoes, and onions, while large herds of dairy and beef cattle roam the meadows and grazing grounds of the lowlands and neighboring foothills.

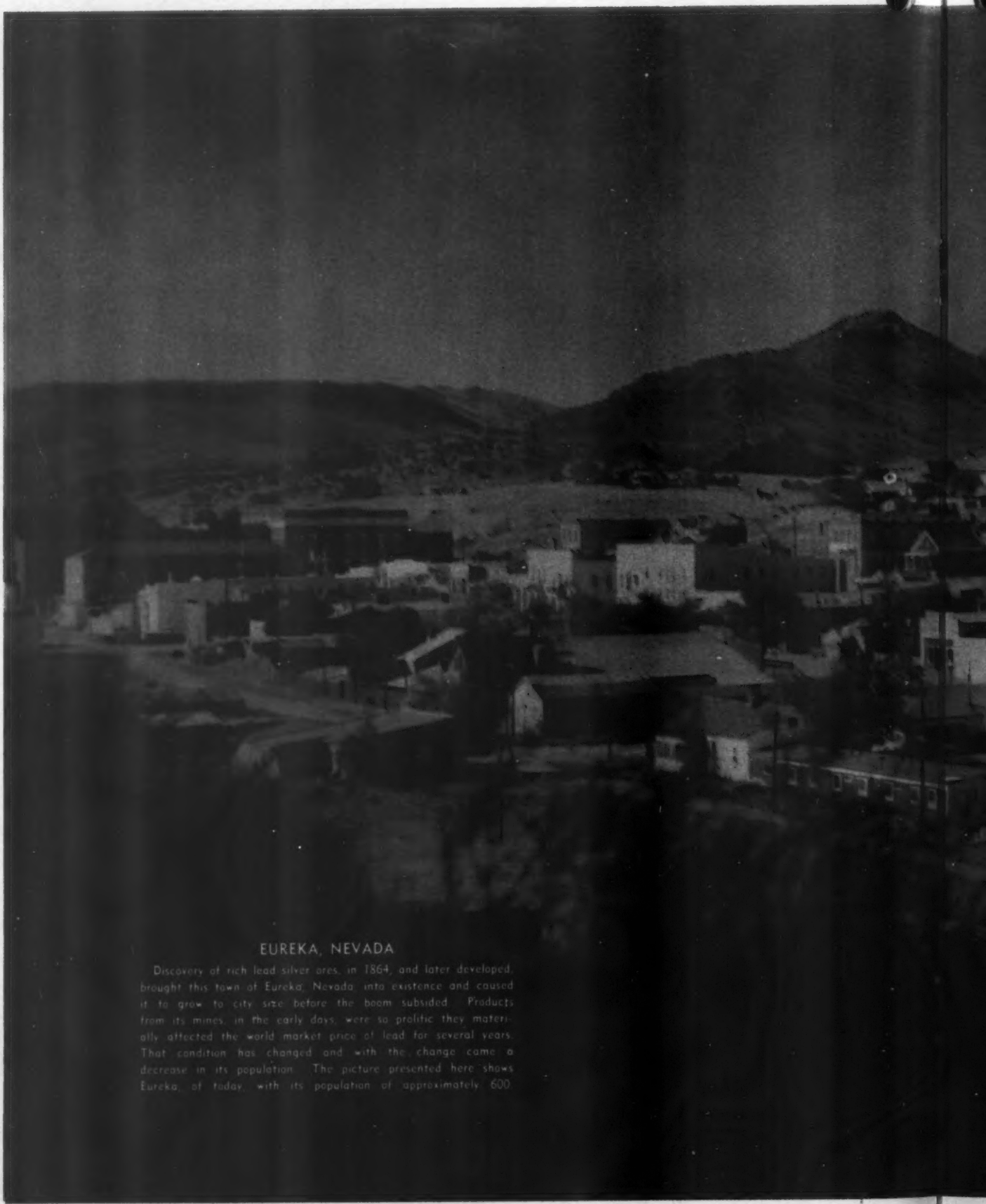
Lovelock also can boast of a large alfalfa meal mill which is located at the edge of town. Most of the ranchers sell their alfalfa crops to the mill, which has a capacity for grinding over 300 tons a day. The alfalfa is crushed into meal and put into containers for the markets which reach out as far as California, Washington, and Oregon.

Lovelock also keeps abreast of the times in its aviation development facilities. Nearby is a good landing field for commercial planes. It is also headquarters for the newest type of agricultural development, that of crop dusting. As many as a dozen planes are headquartered there and, in season, they are kept busy spraying materials for pest controls. Crop-dusting planes are especially built for the purpose, keeping in mind the widest range of operation and the greater spread of the crop-dusting material.

Lovelock is the county seat, has an attractive courthouse built on spacious grounds, and also has stations for the Greyhound and Burlington bus lines for transcontinental travel, as well as the Southern Pacific Railroad.

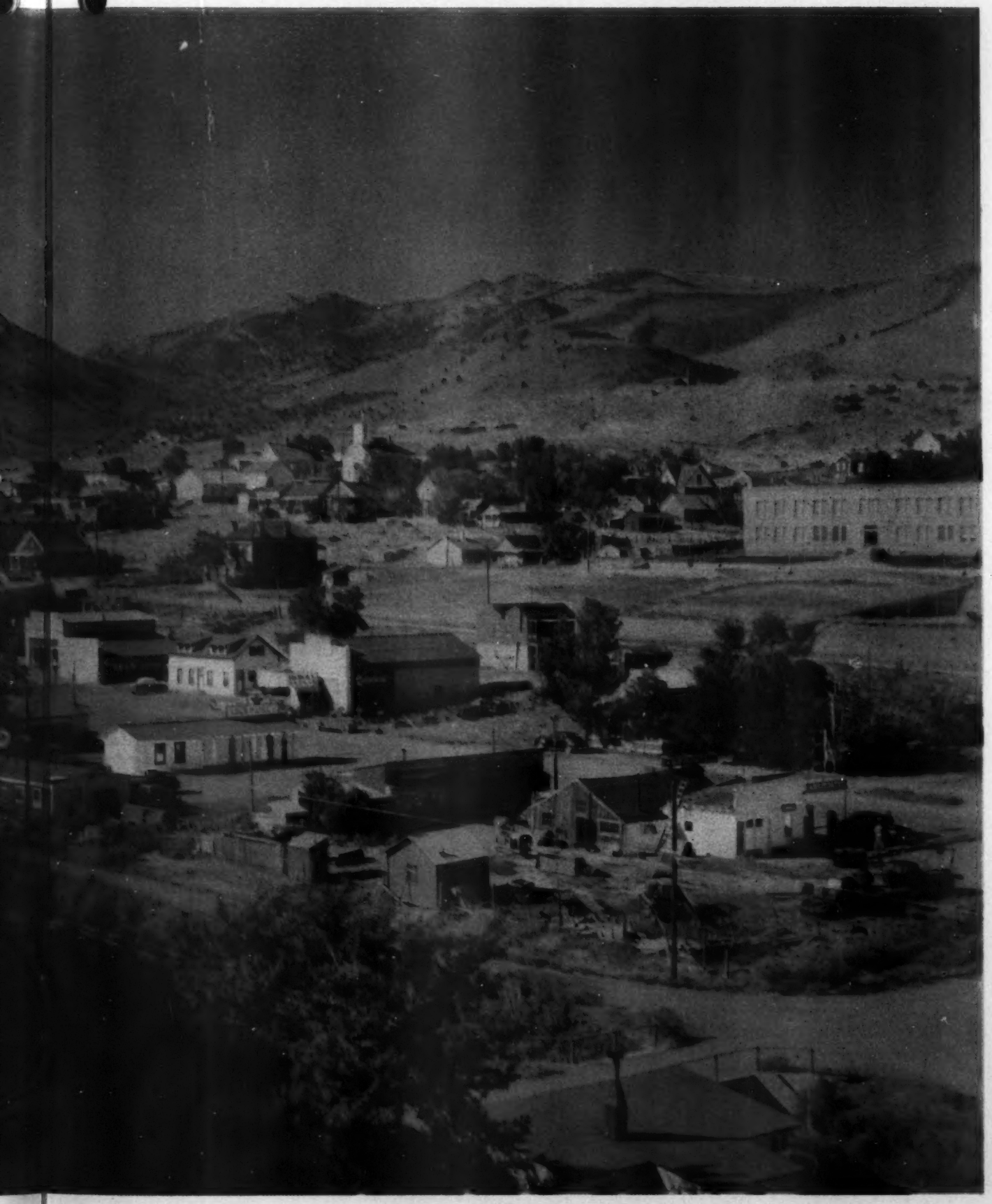
Its many stores and business houses afford quick and convenient service to the many hundreds of ranchers who live on the project.

It enjoys adequate electric facilities, has two motion picture theaters, a public library, and a weekly newspaper, *The Love-*



EUREKA, NEVADA

Discovery of rich lead silver ores, in 1864, and later developed, brought this town of Eureka, Nevada into existence and caused it to grow to city size before the boom subsided. Products from its mines, in the early days, were so prolific they materially affected the world market price of lead for several years. That condition has changed and with the change came a decrease in its population. The picture presented here shows Eureka, of today, with its population of approximately 600.



Thousands of passengers who have crossed the long stretches of Nevada on Southern Pacific trains will recognize this stop at Imlay.

lock Review Miner, which serves the local community and the ranch areas from the viewpoint of the local projects and affords a medium for reflecting public opinion of the citizens.

Crop yields in Lovelock Valley are unusually high, with as many as five crops of alfalfa yielding five tons per acre, wheat 50 bushels per acre, and barley 60 bushels per acre. Supply of farm labor seems adequate in the community, and the employment is mostly obtained locally. Modern equipment is to be seen on the ranches. Harvesters, hay balers, choppers, tractors and any other piece of machinery which is needed in modernized farming, as carried on today, can be seen in the district.

As many as 20,000 cattle and sheep are brought into the area for winter feeding. This custom has been quite successful and is growing in importance.

The usual number of horses needed nowadays for ranching purposes are bred in the valley, and one rancher makes a specialty of breeding and developing the famous Morgan type of horses.

Finding of gold and silver ores in the vicinity of the Big Meadows in the early days also played its part in the later settlement and building up of the district. One of the first discoveries was that at Unionville. Unionville was then in Humboldt County but when the partitioning took place this mining camp went to Pershing. It had already reached its zenith of production, and now has dwindled in population. At one time it was a real boom camp and, before 1880, many people flocked there to work in the mines. The district had a record of more than $3,000,000 in production before the ore veins disappeared and left the mines inoperative. It is possible that a revival of the old camp may take place when mining conditions are more favorable.

Principal products from the mines currently in the neighborhood of Lovelock consist of tungsten, gypsum, mercury, gold, silver, antimony, and iron. Other minerals of importance include copper, manganese, arsenic, lead, perlite, diatomaceous earth, bentonite, jasper, and alabaster.

Perhaps the most important mining in Pershing County at the present time is the Nevada-Massachusetts Company's tungsten property located about 55 miles northeasterly from Lovelock. The ore deposit there is of the contact-metamorphic type, with a number of well-defined ore beds, of which several have been partially developed. The property was discovered in 1917 and was in operation but a short time before the Armistice of the first World War was signed. It had produced some tungsten from the scheelite ores, but had not become fully operative. It was closed shortly afterwards and remained shut down until 1925, when it resumed operations. With the exception of a few minor closings, it has been operating ever since. This mine, which at one time was the largest producing tungsten mine in the entire nation, has produced many hundred thousand tons of ore which have been processed in a mill located on the property.

Varied uses are made from the metal tungsten in the industrial world, the principal one being as an alloy with steel. Tungsten gives to steel an added property of strength and durability. Surgical instruments are made from the alloy of this and other metals and the advantage of this combination lies in the fact that such important tools are not affected by organic acids and ordinary antiseptics. Tungsten steel tools have about five times the efficiency of those made from ordinary steel. Its property of heat resistence, even up to 6,000 degrees Fahrenheit, makes it of extreme value.

A large gypsum deposit in the northwestern section of Pershing County is being developed by the owning company which has operated it for many years. While the gypsum

quarry is located in Pershing County the processing mill for this project is located in northern Washoe County, near Gerlach. There is enough raw material in the quarry to continue present operations for at least 50 years, according to officials of the company operating the quarry. The deposit is located six miles from the processing mill. Its ore is hauled by overhead tramway to the mill where it is made into plaster board and other building materials.

Mercury deposits have been discovered and developed in various sections of the county, but the properties are now more or less inactive because of economic conditions. Large deposits of antimony are known to exist and these have a promising future. Gold and silver have been produced for many years, but miners and prospectors are not particularly interested in developing such properties because of adverse conditions. When these conditions rectify themselves, there is no doubt that Pershing County will quickly assume a leading position in the production of these precious metals in the State.

Great beds of diatomaceous earth can be noted in the hillsides, while the traveler journeys over the many miles of paved highways across the county. Some of these deposits are commercially of great value. One phase of this business consists of the use of diatomaceous earth in poultry raising where the white, light-in-weight rock, which greatly resembles chalk, is used as a moisture absorbant.

Other mining districts in Pershing County which have experienced great activity in the past, or show present development, include the Rochester, Trinity, Antelope, Buena Vista, Ragged Top, Rabbit Hole, Rosebud, Stone House, Auld Lang Syne, and Goldbanks. These are all potential ore producers and the mining fraternity expects them to come into renewed activity as soon as economic conditions, concerning mining of metals, show a more favorable focus.

At Rochester, some years ago, there was intense activity. Beginning about 1911 this continued at top speed until 1920 when the pace slowed down. During that period of production gold, silver, copper and lead ores of a value approximating $6,500,000 was recorded. This camp was divided into two sections known as Upper Rochester and Lower Rochester. A tramway connecting the mines with a processing mill was in operation for several years. It was at Rochester, Nevada, some years ago, that a very rare fossil was found, which linked this western part of the United States, geologically, with that of Siberia. The fossil was determined to be a part of the remains of an Ichthyosaur, a vicious creature of the order of Mesozoic marine reptiles. The fossil was determined to be that of a prehistoric shark's tooth. One of the very few in existence in the entire world, this fossil is now in the archives of the Mackay School of Mines in Reno.

The Seven Troughs Mining District was another very important camp during its time of activity and shows potentialities for the future. It was discovered in 1905 on the east slope of Seven Troughs Mountains. From 1908 to 1921 the district had a production record of nearly $6,000,000 in metallic ores. Production figures since then are not available. Some of the mines in the district are still worked by leasers but its boom aspects have been reduced to a steady, gradual development.

Another district which reached a degree of prominence in the earlier days was that of the Trinity (or Arabia) district located on the east flank of the Trinity Range of mountains, some distance southwest of the county seat. It was discovered in 1859, by George Lovelock, founder of the community of that name, and included such noted properties as the Evening Star Mine and the Montezuma Mine. A smelter built at Oreana in 1867 was the first smelter in the United States to ship lead into the general market, although the little Mormon furnace at Las Vegas and the smelter at Argenta, Montana, produced lead for local consumption prior to that date.

Antelope District, at the north end of the Trinity Range in north Pershing County, also has a good production record. The Black Knob District produced antimony and shipped much of its product during the first World War and is said to have produced more antimony than any other mine in the United States up to that time. Along with other properties in Pershing County, it is still a potential producer.

The Buena Vista District which was also referred to as the Unionville District was organized in 1861, and the principal mine, the Arizona, was discovered in 1862. Unionville at one time was the county seat of Humboldt County, but went with the change to Pershing County. The Arizona mine of this district is reported to have produced about $3,000,000, mostly in silver.

At Ragged Top, tungsten and copper ores were developed and in more recent years some of its products were shipped to Toulon for milling. Toulon, the mill site, is also a small

Cattle yards at Lovelock accommodate thousands of head of beef cattle. Many ranchers specialize in winter feeding, before the cattle are ready for the packing plants.

General view of the Nevada-Massachusetts tungsten mine at Mill City, one of the most important producers of scheelite ores in the nation. With the exception of a few minor shutdowns, this mine and mill have been in continuous operation since 1917. It can be seen, off in the distance on the hillside, from the Victory Highway (U S 40).

The old and the new way of haying in the Big Meadows near Lovelock, Nevada. Rich soil, ample water supplies, good markets, and excellent transportation facilities make it one of the most important agricultural districts in the State.

station along the Southern Pacific, 20 miles south of Lovelock.

Rabbit Hole, Rosebud, Stone House, Auld Lang Syne, and Goldbanks are places which have come to public notice in recent years for their ore production. These camps are still active, and have large potential reserves which may bring them into greater prominence when economic conditions become more favorable for gold and silver mining.

Tin ore in small quantities was found, some years ago, in the Majuba Hills country of Pershing County, but the production was limited. In spite of several efforts to develop the property no one has ever found the supposed parent ledge of this tin. Someone, someday, may do that very thing and bring Nevada into the mining world as a tin producer. Nightingale also was important for its tungsten ore production. In that district, southeast of Lovelock, fine gem-stone specimens of black garnets have been found.

Dad Lee's Station is a desert trading post, about 20 miles north of Lovelock, on U S 40, where numerous relics reminiscent of the early western days are on display. Many travelers stop there to view the curious articles.

Oreana is a small rail station on the Southern Pacific between Lovelock and Mill City. Imlay is a little larger in size and serves as a semidivision point for the same railroad where servicing facilities for both Diesel and steam locomotives are set up. It is located about 25 miles north of Oreana.

Lovelock Cave, at an elevation of 4,500 feet, is in the north face of a limestone hill overlooking Humboldt Sink. When the cave was first worked as a guano mine in 1911, traces were found of an ancient people. Scientific exploration was carried on by the University of California in 1912. About 10,000 artifacts were recovered, nearly all of which are now in Berkeley, California, in the Nevada State Historical Society Museum in Reno, and in the Southwest Museum in Los Angeles, besides a smaller number which have been collected and preserved by residents of Lovelock, Nevada. These relics include woven fabric and various implements, as well as parts of skeletons. It is believed that the cave was inhabited about 2,000 years ago, and possibly as late as the year 1300 A. D.

Some early historians wrote of Horseshoe Cave in this area. It cannot be entirely identified today, but it may have been the Lovelock Cave. Among the traditional legends of the Paiutes is one referring to an ancient tribe of cannibals. These cannibals were small, redheaded and freckled, according to the fable. At war with them, the Paiutes drove the entire tribe into Horseshoe Cave and told them that unless they promised to stop eating their neighbors the cave would be their funeral furnace. The fierce little man-eaters said they would promise nothing, so the Paiute fable goes, whereupon the piles of driftwood were heaped at the cave entrance and the cannibals burned.

No one has ever been able to draw a comprehensive report on all of the valuable mineral and metal deposits which exist in the rich Pershing County mountains. The future for such operations, while depending largely upon economic conditions, looks promising for new discoveries and development.

PHOTOGRAPHIC CREDITS

Pages 1, 5, 8, 9, 12, 13, 16, 17, 18, 19, 20, 24, 25, bottom page 26, pages 27, 28, 29, 30, and 31, Jerri Tibbitts, staff photographer; pages 2, 6, 7, courtesy Bennett-Edwards Company, Reno; pages 10 and 11, Agricultural Extension Service, Lovelock; page 14, McCrodan, Lovelock; page 15, Paul Gardner, Lovelock; top page 22, Olney Leighton, courtesy Peter Merialdo, Eureka; bottom page 22, R. W. Gibson, Eureka; page 23, top page 26, courtesy Mrs. Hjul, Eureka, Nevada; page 4, from Highway Department files; page 21, Bureau Reclamation, Salt Lake City, Utah.

Eureka, Nevada, as it looked some 50 years ago, when lead and silver mining activity assumed the characteristics of a boom.

Another old-timer which shows the main street of this once booming Nevada town, with long stacks of lead bullion bars in the foreground.

This is not a road block but an informal gathering, many years ago, of some of the folks who lived on Ruby Hill, in the vicinity of Eureka.

Eureka People Place Great Faith in Ruby Hill Mines

RICH IN reflected glory of early day mining achievements, Eureka, Nevada, currently passing through a siege of the doldrums, pins its faith on the possibility that its future may be even greater than its past. Substantial evidence of this confidence in the days and months ahead is well substantiated and trends toward two major industries—mining and oil.

Eureka's story revolves about the discovery and later development of rich lead and silver ores in the district, the gradual exhaustion of the known ore bodies, and the discovery, during the past ten years, of huge deposits at considerable depth in some of the older producing properties. The days of the glittering past are gone and live only in the memory of the old-timers who still make Eureka their home, but these pioneers delight in recounting the time when Eureka enjoyed a mining prosperity second only to the Comstock Lode in Virginia City, and had many producing mines, processing mills and fat pay rolls. Primarily, the future depends in a very large measure upon the solution of a vexing water problem deep in the Ruby Hill mines two miles from town. When the engineers lick this specter the transition period will be at an end and better times will be here again. Anticipation of this solution raises the community spirit to a higher level and brings on a more cheerful atmosphere.

Discovery of rich argentiferous lead ores, in 1864, brought into being the camp of Eureka which eventually grew to city size and attracted many thousands of persons to the new find. Eventually, dozens of smelters and mills were constructed to process the ores. The peak period of production and smelting continued from 1870 to about 1890, when production declined. After that many of the ore bodies, although unusually large and rich in size and value, became worked out. Then the town dwindled in girth and population, mining slowed down to a halt, smelters and mills closed down, pay rolls disappeared and the people entered upon an era of enforced curtailment and inactivity which lasted for many years. The transition period has been long and trying.

In the very heart of the Sagebrush State, straddling highway U S 50, Eureka is a small community of 500 population whose people make their livelihood through cattle raising, ranching, small-business operations, a bit of mining, the tourist trade during the seasonal months, and the fact that good deer hunting and some excellent fishing grounds are to be found in the nearby mountains. From these endeavors come the yearly revenues which keep the town alive and a going concern. The town's business houses and stores, its streets and lanes, its pole and water lines, follow pretty closely the course of a narrow canyon whose walls on either side are a part of the Diamond Range of mountains. Some parts of the town even creep up the hillsides a way, but the line stops before they reach the crest.

Mining, in the past, has been the paramount industry, but in recent years this industry has sagged. Cattle raising in the neighboring valleys and on mountain grazing lands is a close contender and, between the two, a fairly stable prosperity exists in spite of the fact that the mills are gone and major mining has declined.

In these surrounding mountains, into which the town of

General view of the Ruby Hill mines at Eureka. Here Ventures Limited, a Canadian Corporation, in recent years diamond drilled the ground and discovered huge masses of good ore at considerable depth. Water difficulties, however, retarded the development work. Engineers are racking their brains to find a successful solution. Estimates of the underground ore bodies range in value from $50,000,000 to $60,000,000.

Eureka, Nevada, looks different today than it did 50 years ago. Its population of nearly 600 hopes for a revival of mining operations in the future.
Eureka County's Courthouse, built strong and sturdy, was constructed in 1879 at a cost of $55,000. It houses county authorities and the district court.

This is the old Richmond Smelter in use during the hectic days of lead mining, on a huge scale, in Eureka. Thousands of tons of ore were processed in its furnaces. Today, only a few broken walls and lots of debris mark the spot.

One of the hot water springs at the bottom of the geyser "bench" near Beowawe boils up at 10- to 15-minute intervals.

Eureka blends very gracefully, it is believed there still remains vast quantities of minerals and metals of a varied nature. That fact has been partially, but definitely, established. In the adjacent valleys the soil will produce a variety of crops in abundance. Wild hay, alfalfa, and some grains do well on the ranches and farms where water is readily accessible. The lower sections of the sprawling mountains are covered with small-growth juniper and pinion, but there is a dearth of heavy timber. Sagebrush and rabbit brush are everywhere in the unfenced flat lands and, after one of the infrequent rains, the air is filled with the pungent, but to Nevadans a very delightful, fragrance of sagebrush.

Unlike many other Nevada boom towns, the drift toward Eureka was slow and cautious. Lead and silver alone lacked the luster and the glamor and did not provide the powerful magnet which lured thousands to gold discoveries in a hurry.

The discovery which gave Eureka its name and subsequently led to its exploration and development was made on September 9, 1864, by a prospecting party from Austin, Nevada. While searching the hills, in the vicinity of what is known as New York Canyon, this party found pieces of rock which were different than anything they had previously picked up. The rock puzzled the prospectors and they decided to make an experiment in the hope of determining its nature. They placed large pieces in the campfire for heat treatment. The intense heat melted the rocks and produced a flow of metal. The men in the party could not believe it to be silver and the metal was too hard to be lead. It had little resemblance to the silver ores found at Austin, a camp 70 miles west. However, it was definitely a metal and they exclaimed "Eureka"! So, it is related in Thompason and West's History, Eureka came

The Sadler Ranch in Diamond Valley, 40 miles northwest of Eureka. One of the first in Nevada to be settled, it was owned and operated, at one time, by former Governor Reinhold Sadler, of Nevada. At present it is operated as a big cattle spread.

by its name. The prospectors located some mining claims around the place and agreed to call the district Eureka.

Some of the ore was later taken to Austin to be tested. It proved to be a combination of silver and lead, but it was not workable in the Austin type of mills. It was later determined that the metal was recoverable only through smelting. As a result of this condition only a few went to the new lead mines at first. The original discoverers themselves were without much capital and sought to sell their properties as they did not know nor had they the means to develop their claims. Some time later, in 1865, the Buckeye and Champion mines, on what is now known as Ruby Hill, were located. Eventually these mines turned out to be rich in production.

In the meantime, the first locators were successful in finding New York capitalists to buy their properties. In 1866 these purchasers spent large sums of money in processing the ores but, through lack of knowledge of the proper treatment, they couldn't make a profit. This failure, and others following, dampened the prospects of the district and it was not until 1869 that interest in the camp was again aroused. Eventually

Ranch house on the Bailey Ranch, in Diamond Valley, 50 miles north of Eureka. Many hundreds of cattle are run on the flats near this ranch.

Wild ducks and geese make this pool on the Sadler Ranch, Diamond Valley, a stopping place on their annual migration trips.

Last year's leftover hay joins this year's crop with a striking color effect on the Haystack Ranch, near Palisade Canyon, Eureka County, Nevada.

This is one of the dozen or more active geysers located on top of the "bench" seven miles southeast of Beowawe.

Vast piles of waste material taken out of the many holes in the hillside remind the tourist of a once prosperous and active camp.

Major W. W. McCoy, who came into the district early and acquired some claims, was instrumental in perfecting a smelter process for successfully extracting the metal from the rocks. The first successful smelting furnace put up in Eureka was constructed by the Eureka Smelting Company under Major McCoy's supervision.

Eureka had the distinction of being the first camp in America to successfully treat the argentiferous-lead ores found in the district. After the processing problem was solved, many furnaces were constructed and the smaller mines were eventually consolidated into stronger groups. In the metamorphosis there emerged the Eureka Consolidated, the Richmond Consolidated, The Ruby Consolidated, Silver West Consolidated, Matamoras Mining and Smelting Company and the Hoosac Company, which eventually became bywords in the camp and operated for a long time.

In 1876 there were 19 furnaces operating with a daily capacity of from 40 to 60 tons each. The principal producing areas were the Ruby Hill, Prospect Mountain, and McCoy Hill, all in the immediate vicinity of the growing town of Eureka. Later came the mines at Cortez, farther north in the county, in New York Canyon, and in Secret Canyon—places which were located some distance away from the immediate camp of Eureka. In 1878 the total bullion shipments approximated $7,000,000, consisting of gold, silver, and lead. The bulk of the bullion was lead.

In 1881 the Ruby Hill Mining News stated there were 50 producing mines, and thrice that number which could be made productive at small cost. Every share of the Eureka Consolidated (there being 50,000 shares), purchased in 1871, had returned a profit of $82 to the shareholders. The Richmond Mine, at the time, had returned nearly $3,000,000 in profits and the mine was in its infancy. The value of the Eureka mines, as shown by market quotations, was $55,000,000. Up to that time, 1881, the mines had yielded a gross of over $68,000,000 and paid over $7,000,000 in dividends. The lead product from its mines was so great the world market price for that commodity was largely influenced by Eureka's production.

The Eureka and Palisade Railroad Company completed its narrow gauge line from Palisade to Eureka, a distance of 90 miles, in October 1875. This made Eureka a rail center and reception point for all wagon transportation and freight and passenger traffic for many mining camps south of Eureka. This narrow gauge continued operation until 1938 when it gained Public Service Commission approval to discontinue service.

Excellent stone quarries and beds of clay were found conveniently near Eureka and this accounts for the number of brick and stone buildings still standing in the town. The Eureka County courthouse, of brick, was built in 1879 and cost $55,000. It was a very substantial structure, has come through the years well preserved, and is just as sturdy today as ever. It is still used for county offices, and the district courtroom is on the second floor.

Eureka had its share of fires and floods in the boom days. Three disastrous fires, occurring several years apart, caused much damage. In the 1879 fire the loss was estimated at a million dollars and half the town was laid waste, with 2,000 people destitute and homeless. The fire of 1880 followed the same course, destroyed many business buildings, together with some of the finer residential properties. A space equal to 50 acres, consisting of the very heart of Eureka, was almost completely destroyed.

The camp experienced a disastrous flood in 1874 when a cloudburst hit the nearby mountains. Water rolled down the canyons, through the city's streets, and a torrent of water carried everything before it. Two years to the day later, another cloudburst hit the town, but fortunately the turbulent volume of water was confined within the banks of the town ditch and no lives were lost and little damage occurred. In 1878 another flood threatened the town, but the inhabitants sought the hills for safety while a white, resistless wall of foamy water swept down the main thoroughfare and divided below the Richmond dumps. This flow of water was heavier than the one in 1874 but was not so destructive. No lives were lost. The next afternoon another flood hit the town but the people were on the alert and safely got out of the path of the oncoming wall of water through the city.

Several other mining districts in Eureka County have records of big production. These include the Cortez district with a recorded total of $10,000,000 and Mineral Hill with $2,500,000.

During the past ten years, interest in the mining resources of Eureka County has been revived with the most significant operation being that of the Eureka Corporation, Ltd., composed of prominent Canadian mine executives who made deep diamond drilling tests on the old Ruby Hill mines. Together with engineers of the United States Bureau of Mines, drilling from widely separated stations on the 900-foot level of the old Locan shaft on Ruby Hill, they obtained results which foreshadow the district's possible return to a leading position among Nevada metal producers. A number of these drill holes were sunk and the cores showed ore of a highly profitable grade at a depth around 2,300 feet below the surface. From core indications, it is believed the underground ore body is very large in extent. Some estimates place it as high as $60,000,000 of lead, silver, zinc, and gold. This ore remains to be captured.

After a thorough study of the core records, company officials decided upon a campaign of exploration and excavation. This meant additional equipment, an increased force of men, for the Eureka District, and the outlook indicated many years of continuous activity at the mines. A new shaft, The Fad, was decided upon. Work of sinking this four-compartment unit was begun and carried on for months. Running into bad luck at the 2300-foot level, miners encountered an immense flow of underground water. In spite of all measures taken, the water flooded out the shaft. The water problem became so serious, operations were shut down so that the engineers could attack the problem from a new angle. At the present time, plans for combatting the water difficulty are being studied and it is hoped the engineers will find a way to overcome the difficulty. If, as and when the water problem is solved, the Eureka mines can continue exploring and production.

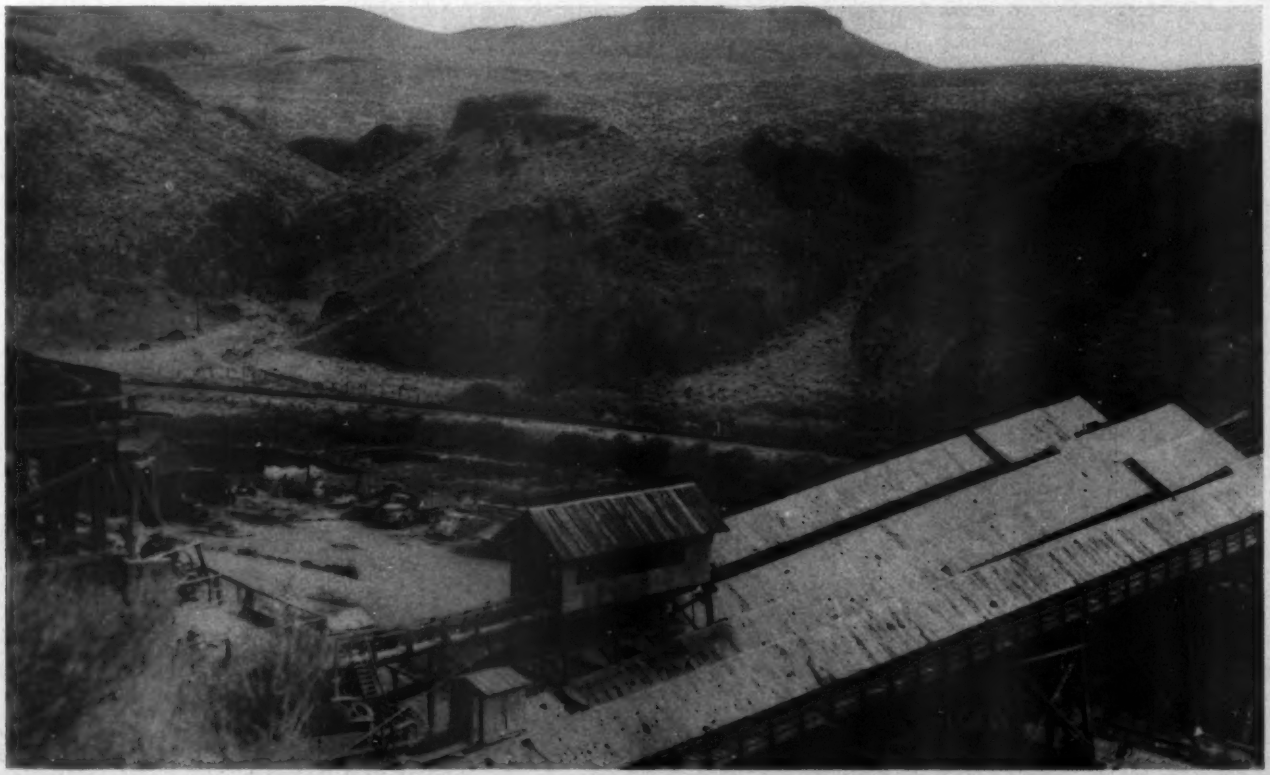
No one knows just how soon this will be solved but the people of Eureka have great faith in their engineers and believe it is only a question of time until the mines again will be in good production. Meanwhile the old lead, silver, and gold camp is biding its time.

The folks of Eureka are fully awake to the possibilities that such a condition may bring about.

With these two hopeful prospects in view, the citizens of Eureka have confidence that the future has a brighter picture to present to the world and that before long the mines will again be brought into production.

Southern Pacific Railroad Company gouges trainloads of gravel out of this pit and builds ballast along its Ogden Division right of way. Here the gravel is dug, crushed, cleaned, screened and loaded from a source of supply which will last for years.

Part of the gravel chute at the workings of the Southern Pacific gravel pit at Palisade Canyon, in northern Eureka County.



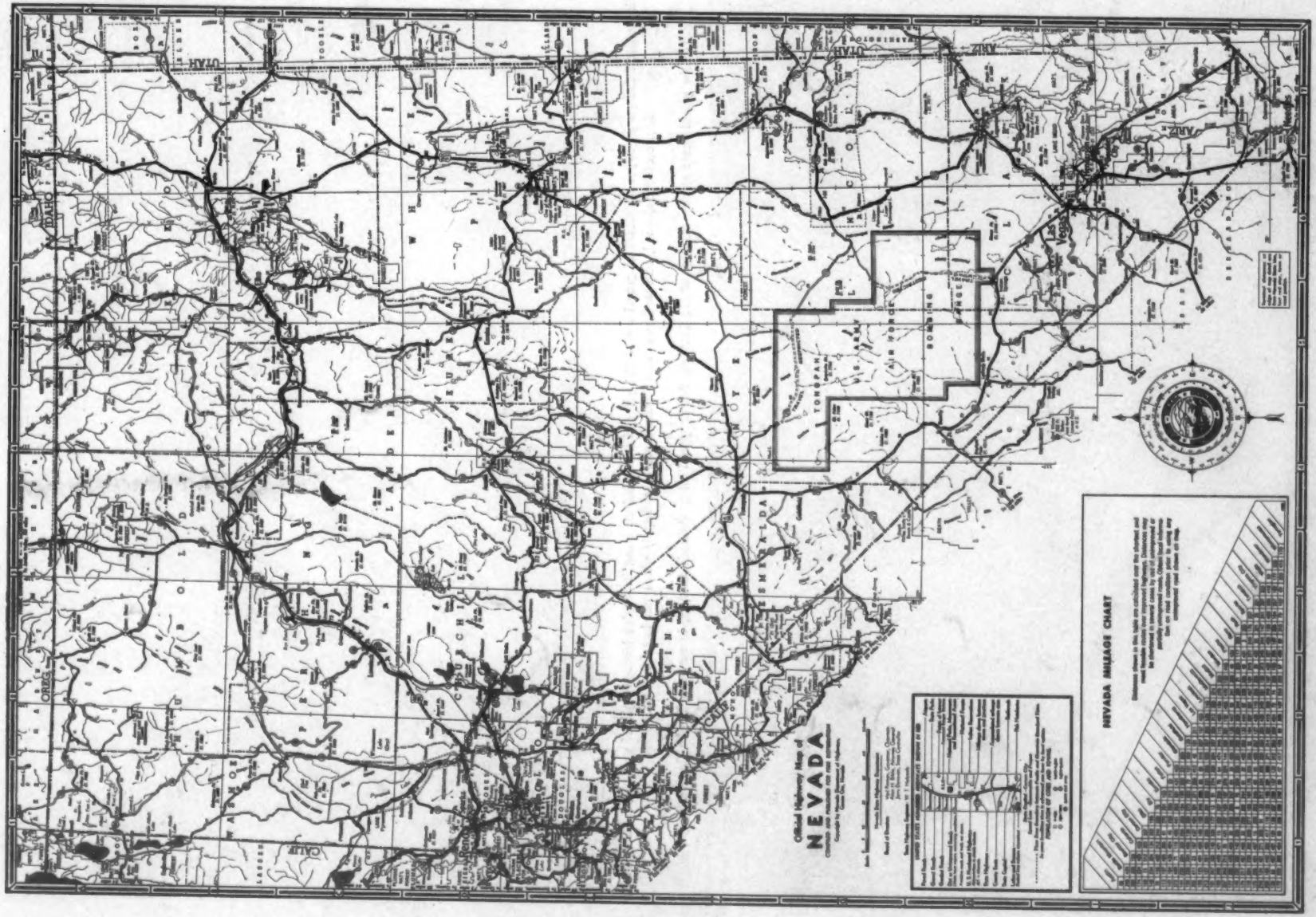
SEC. 34.66 P. L. & R.
U. S. POSTAGE
PAID
Carson City, Nev.
Permit No. 1

A. VIRGINIA SWIFT.
1-E. PROCTOR ST.
CARSON CITY,
NEV.

RETURN POSTAGE GUARANTEED

DEPARTMENT OF HIGHWAYS

CARSON CITY, NEVADA



STATE PRINTING OFFICE OF NEVADA, CARSON CITY

SEC. 34.66 P. L. & R.

A. VIRGINIA SWIFT.

RETURN POSTAGE GUARANTEED